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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/523,762	02/07/2005	Naoki Hashiguchi	025260-093	2619

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EXAMINER
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KRUER, STEFAN

ART UNIT	PAPER NUMBER
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3654

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/12/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	Application No. 10/523,762	Applicant(s) HASHIGUCHI, NAOKI	
	Examiner Stefan Krueer	Art Unit 3654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 14 - 26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14 - 26 is/are rejected.
- 7) ☒ Claim(s) 18 - 20 and 26 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 February 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>4 August 2006</u> . | 6) <input checked="" type="checkbox"/> Other: <u>Translation, JP 2000-289954</u> .      |

## DETAILED ACTION

### *Information Disclosure Statement*

The information disclosure statements (IDS) filed on 7 February 2005 and 4 August 2006 fail to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because copies of foreign patent documents, excluding reference CN 1410338 A, were not provided. The translation of CN 1410338 A, as listed on the IDS, was not provided.

The examiner was able to retrieve and consider those documents as initialed.

### *Specification*

The abstract of the disclosure is objected to for the use of an indefinite term "thin" as rejected below. Correction is required. See MPEP § 608.01(b).

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

**Claims 14 - 25** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

**Re: Claim 14**, "A *thin* elevator-hoisting machine ..." remains indefinite because "thin" is a relative term to which a particular dimension(s) of reference or comparative element has not been defined.

**Re: Claim 17**, "type" of "radial gap *type* motor" is indefinite.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 15 and 24** are rejected under 35 U.S.C. 102(b) as being anticipated by Kato et al (JP 2000-289954).

Kato et al disclose an elevator-hoisting machine of thin depth comprising:

- A sheave (20, Fig. 2) whose thickness in a rotation centerline direction is thinner than an outside dimension in a radial direction,
- A stator mounting portion (along 18) that supports a stator core (18) of a motor provided in a surface of a side opposite to the sheave in the sheave rotation centerline direction of the hoisting machine,
- A fixed main shaft (17) that supports the sheave through a bearing (depicted, not numbered),
- A fixed frame (2) member provided with a hat shaped cross-sectional shape provided in a vicinity of a brake device-mounting portion (23).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 17 and 22 - 23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al in view of Eckersley et al (4,739,969).

**Re: Claim 17**, Kato et al disclose the related art having a radial gap motor (Fig. 3) in which the brake device (26) includes the outer radial surface of the cylindrical rotor-mounting portion (191).

Attention is directed to Eckersley et al who teach their radial-gap motor (M, Fig. 5) comprising a cylindrical rotor-mounting portion (20) and a stator-mounting portion disposed in a radial direction of rotation, maintaining a gap with the rotor-mounting portion, characterized by a brake device (50) in which an inner radial surface of the cylindrical rotor-mounting portion forms a braking surface, whereby controlled slippage for leveling of the elevator car and quickened, smooth release of the brakes and a compact arrangement (Col. 5, Line 51 and Col. 8, Line 28 – 35 respectively).

It would have been obvious to one of ordinary skill in the art to modify the invention of Kato et al with the teaching of Eckersley et al to provide an elevator-hoisting machine with braking means affording compactness and smooth, heightened brake actuation.

**Re: Claims 22 - 23**, Kato et al disclose their fixed frame member (2) that extend to sides opposite to the sheave of the fixed main shaft and their brake device to form a closed structure.

**Claim 20** is rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al in view of Kitabayashi et al (4,306,165).

Kato et al are silent regarding ventilation of their apparatus.

Attention is directed to Kitabayashi et al who teach their blower fan (15, 16) attached to an inner portion of their fixed frame member (10) for purpose of cooling the stator core and rotor.

It would have been obvious to one of ordinary skill in the art to modify the reference of Kato et al with the teaching of Kitabayashi et al to promote cooling of the heat generating electrical components housed in a motor.

**Claim 25** is rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al in view of Nagata et al (6,851,520).

Kato et al disclose their sheave and rotation member as integral members.

Attention is directed to Nagata et al who teach a related art (Fig. 3) having the sheave and rotation members as separate members as an alternative to the integral embodiment of Kato et al, whereby replacement of the sheave can be made without replacement of the rotation member.

It would have been obvious to one of ordinary skill in the art to modify the reference of Kato et al with the teaching of Nagata et al to provide an interchangeable feature to primary wear components for the benefits of savings in costs and downtime.

#### ***Allowable Subject Matter***

**Claims 14 and 16** would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

**Claims 18 – 20 and 26** are objected to as being dependent upon rejected base claims, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

**Claims 18 and 26** contain allowable subject matter because the teachings of the prior art of record taken as a whole do not show or render obvious the combination set forth including:

- **Claim 18**, the opening portion provided to the fixed frame member in a region adjacent to the braking surface of the rotor-mounting portion.
- **Claim 26**, an outer side cylindrical portion that bends substantially in a right angle at the end of second extension portion.

### ***Response to Arguments***

Applicant's arguments filed 20 December 2006 have been fully considered but they are not persuasive.

The rejections of the previous office action were in response to the claim language. Applicant's arguments are based on the amended claim language applied to the prior art of reference; consequently, this office action comprises a detailed response to Applicant's arguments.

With respect to a translation of the Chinese Office Action, no such translation has been provided. The NPL document *dated* 28 April 2006 and *filed* on 4 August 2006 includes pages of the Chinese version of the original international application.

With respect to not including all the cited references on the PTO-892, the references in question were cited on applicant's Information Disclosure Statement.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stefan Kruer whose telephone number is 571.272.5913. The examiner can normally be reached on M-F.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gene Crawford can be reached on 571.272.6911. The fax phone number for the organization where this application or proceeding is assigned is 571.273.8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866.217.9197 (toll-free).

SHK  
7 March 2007

  
GENE C. CRAWFORD  
SUPERVISOR, PATENT EXAMINER



**Disclaimer:**

This English translation is produced by machine translation and may contain errors. The JPO, the INPIT, and those who drafted this document in the original language are not responsible for the result of the translation.

**Notes:**

1. Untranslatable words are replaced with asterisks (\*\*\*\*).
2. Texts in the figures are not translated and shown as it is.

Translated: 06:55:20 JST 03/08/2007

Dictionary: Last updated 02/09/2007 / Priority: 1. Mechanical engineering / 2. Industrial Products / 3. Manufacturing/Quality

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**CLAIMS**

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**[Claim(s)]**

[Claim 1] The base which carried out opening of the shape of a bowl to the nothing 1 side, and the main shaft which was prepared in the above-mentioned base and has been arranged from the bowl base core of the above at the set-up condition, The bowl-like object which it is arranged in the above-mentioned base at a fitting condition, and a base meets the base of the above-mentioned base, is arranged, and a core is \*\*\*\*(ed) by the above-mentioned main shaft, and rotates, The traction sheave formed in the perimeter of this bowl-like object, and the stator winding prepared in the inner skin of the above-mentioned base, The armature which is prepared in the peripheral face of the above-mentioned bowl-like object, counters with the above-mentioned stator winding, is arranged, and constitutes an electric motor by the above-mentioned stator winding, The loop wheel machine for elevators equipped with the brake which has the braking piece which the braking side which was established in the above-mentioned bowl-like object, and was formed in the inner skin of the above-mentioned bowl-like object is countered, and it is arranged, and carries out braking operation.

[Claim 2] The loop wheel machine for elevators according to claim 1 characterized by having had the support plate with which the opening edge of the base was equipped, and which formed the dead air space between the above-mentioned bases, and ends considering a main shaft as the architecture supported by the bottom and support plate of the above-mentioned base.

[Claim 3] The loop wheel machine for elevators according to claim 1 characterized by having the encoder which is arranged centering on the spindle nose by the side of the base of a support plate, and detects the revolution of a traction sheave.

[Claim 4] Penetrate a base and the inspection hole left mutually is prepared in the direction which meets the peripheral surface of the above-mentioned rim while countering the rim side of a traction sheave and being arranged. It is the loop wheel machine for elevators according to claim 1 characterized by having the main rope blank stop implement which the 1 side was concluded by the edge of this inspection hole, the other side formed few openings between the main ropes wrapped around the traction sheave, countered, and has been arranged.

[Claim 5] The loop wheel machine for elevators according to claim 1 characterized by having the leg in which the suspension pore in which it is formed in one and a main rope is inserted in a base was prepared.

[Claim 6] It is the loop wheel machine for elevators according to claim 1 characterized by having the main

rope advice implement which was formed in the inner surface of the base, countered with the rim side of the traction sheave, has been arranged, and has been arranged by fixed distance getting used from the above-mentioned perimeter along with the perimeter of the above-mentioned traction sheave in the radial direction of the above-mentioned traction sheave.

[Claim 7] The loop wheel machine for elevators according to claim 2 characterized by having prepared the traction sheave in the opposite part side at the base of a base of a bowl-like object, and preparing an armature in the opening edge side with the above-mentioned base of the above-mentioned bowl-like object.

[Claim 8] The loop wheel machine for elevators according to claim 7 characterized by having equipped the support plate with the brake and having arranged it between bases.

[Claim 9] The loop wheel machine for elevators according to claim 8 characterized by constituting with the hinge which pivoted the support plate possible [ rotation of the rotation plate with which the brake was equipped, and which was concluded by the base removable, the fixed plate with which the opening edge of the above-mentioned base was equipped, the above-mentioned rotation plate, and a fixed plate ].

## DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to traction-type the loop wheel machine for elevators with which the rotor and traction sheave of the electric motor which were prepared in the frame were formed in one.

[0002]

[Description of the Prior Art] Drawing 10 and drawing 11 are drawings showing the conventional loop wheel machine for elevators shown, for example in JP,H8-511758,A, and the front view and drawing 11 which show the condition that the advice rail of the elevator was equipped with drawing 10 are the A-A line sectional view of drawing 10 . In drawing, the advice rail of the elevator in which 1 was set up, and 2 are the bases which carried out opening of the shape of a bowl to the nothing 1 side, the advice rail 1 is equipped with them through the opening edge 3, and the main shaft 5 is formed in the base 1 from the bowl-like base 4 at the set-up condition. 6 is the stator winding prepared inside [ base 4 ] the base 2.

[0003] 7 is the rotor \*\*\*\*(ed) by the main shaft 5. The opposed face inside [ base 4 ] a base 2 is countered with the stator winding 6. The consisting-of [ it was formed in the armature / which forms a disc form electric motor / 8, brake disc / which was formed in the perimeter of an opposed face with base 4 inner side / 9, and opening edge 3 side of a base 2, and / brake discs 9 / by the byway ] traction sheave 10 is formed. Although the electromagnetic brake which 11 is prepared in the perimeter edge of a base 2, and compresses and carries out braking operation of the brake disc 9, and 12 are the main ropes wrapped around the traction sheave 10 and the graphic display is omitted, it hangs to ends and \*\*\*\*\* is connected with them, respectively.

[0004] The conventional loop wheel machine for elevators is constituted as mentioned above, and the tooth back of the advice rail 1 is equipped with it, and it is arranged at the upper end approach of a hoistway (not shown). and -- a main rope 12 is wrapped around the traction sheave 10, and a main rope 12 drives according to frictional force by the revolution of the traction sheave 10 -- a basket -- it hangs and a counter direction is made to go up and down \*\*\*\*\* mutually

[0005]

[Problem to be solved by the invention] In the above conventional loop wheel machines for elevators, since the electromagnetic brake 11 projects and is prepared from the outside of a base 2, the outside dimension of a loop wheel machine increases. Moreover, since maintenance service of electromagnetic brake 11 grade and inspection were required, it was required, the tooth space large for a loop wheel machine was needed, and the tooth space for maintenance work also had the trouble that establishment of a loop wheel machine was restrained or establishment became difficult.

[0006] This invention is made in order to cancel this trouble, and it aims at obtaining the loop wheel machine for elevators which can be easily installed in a narrow tooth space.

[0007]

[Means for solving problem] In the loop wheel machine for elevators concerning this invention The base which carried out opening of the shape of a bowl to the nothing 1 side, and the main shaft which was prepared in the base and has been arranged from the base core of the shape of a bowl of a base at the set-up condition, The bowl-like object which it is arranged in a base at a fitting condition, and a base meets the base of a base, and is arranged, and a core is \*\*\*\*(ed) by the main shaft, and rotates, The traction sheave formed in the peripheral face of this bowl-like object, and the stator winding prepared in the inner skin of the base, The brake which has the braking piece which the braking side which was established in the bowl-like object and formed in the inner skin of a bowl-like object is countered, and it is arranged, and carries out braking operation to the armature which is prepared in the peripheral face of a bowl-like object, counters with a stator winding, is arranged, and constitutes an electric motor by a stator winding is formed.

[0008] Moreover, in the loop wheel machine for elevators concerning this invention, the support plate with which the opening edge of the base was equipped and which formed the dead air space between bases is formed, and the ends of a main shaft are supported by the bottom and support plate of a base.

[0009] Moreover, in the loop wheel machine for elevators concerning this invention, the encoder which is arranged centering on the spindle nose by the side of the base of a support plate, and detects the revolution of a traction sheave is formed.

[0010] Moreover, it sets to the loop wheel machine for elevators concerning this invention. Penetrate a base and the inspection hole left mutually is prepared in the direction which meets the peripheral surface of the rim of a traction sheave while countering the rim side of a traction sheave and being arranged. 1 side is concluded by the edge of this inspection hole, and the main rope blank stop implement which the other side formed few openings between the main ropes wrapped around the traction sheave, and has been countered and arranged is formed.

[0011] Moreover, in the loop wheel machine for elevators concerning this invention, the base which has the leg in which the suspension pore in which it is formed in one and a main rope is inserted was prepared is prepared.

[0012] Moreover, in the loop wheel machine for elevators concerning this invention, it is prepared in the inner surface of a base, and it counters with the rim side of a traction sheave, is arranged, and the main rope advice implement arranged by fixed distance getting used is radially formed from the perimeter of a traction sheave along with the perimeter of a traction sheave.

[0013] Moreover, in the loop wheel machine for elevators concerning this invention, a traction sheave is prepared in the opposite part side at the base of a base of a bowl-like object, and an armature is prepared in

the base opening edge side of a bowl-like object.

[0014] Moreover, in the loop wheel machine for elevators concerning this invention, a support plate is equipped with a brake and it is arranged between bases.

[0015] Moreover, a support plate is constituted in the loop wheel machine for elevators concerning this invention by the hinge pivoted possible [ rotation of the mutual opposite part of the rotation plate which it was equipped with the brake and concluded by the base removable, the fixed plate with which the opening edge of the base was equipped and a rotation plate, and a fixed plate ].

[0016]

[Mode for carrying out the invention] Form 1. drawing 1 of operation - drawing 6 are drawings showing an example of the form of implementation of this invention. The drawing 2 equivalent figure showing the architecture of an encoder [ in / drawing 2 can set drawing 1 in a front view, can be set in the B-B line sectional view of drawing 1 , and / in drawing 3 / the loop wheel machine of drawing 1 ], the right side view of drawing 2 showing the condition that drawing 4 removed the base and the bowl-like object, the perspective view of the base [ drawing 5 ] by the side of the tooth back of drawing 1 , and drawing 6 are the perspective views of the main rope blank stop implement of drawing 3 .

[0017] In drawing, 2 is the base which carried out opening of the shape of a bowl to the nothing 1 side, and the suspension pore 14 of the main rope which penetrated the opening edge 3, the bowl-like base 4, the leg 13 formed in the bottom, and the leg 13, and was open for free passage to the cup part and which is mentioned later is formed. 15 is a support plate, straight side is arranged in a sliding direction and both ends are arranged at the opening edge 3 of the base 2, respectively. 16 is a conclusion implement which consists of a bolt which was inserted in the opening edge 3 and thrust into the support plate 15.

[0018] It is a main shaft, and a set-up condition, i.e., ends, is supported by the core of a support plate 15 and base 2 base 4 from base 2 base 4, and 17 is formed with a support plate 15 and a base 2, it crosses the bowl-like object mentioned later and the space where the brake was arranged, and is arranged. 18 is the stator winding prepared in the inner skin by the side of the opening edge 3 of a base 2.

[0019] 19 is a bowl-like object, and it is arranged in a base 2 at a fitting condition, and a base meets the base 4 of a base 2, is arranged, a core is \*\*\*\*(ed) by the main shaft 17 by a bearing, and it rotates. The traction sheave by which 20 was formed in the peripheral face by the side of the base of a bowl-like object 19, and 21 are armatures, they are prepared in the peripheral face of a large diameter, counter with the stator winding 18, are arranged, and constitute an electric motor from an outside diameter of the traction sheave 20 by the side of the opening edge of a bowl-like object 19 by the stator winding 18.

[0020] 22 is the brake which consists of an electromagnetic brake prepared in the bowl-like object. An end [ with the support pin 23 ] The brake arm 24 and ends which were \*\*\*\*(ed) by the support plate 15 A support plate 15 [ and the braking piece 26 which consists of a brake spring 25 connected with the rotation end of the brake arm 24, respectively, and the braking side 191 which has been arranged at the support pin 23 approach of the brake arm 24, and was formed in the inner skin by the side of the opening edge of a bowl-like object 19 and the brake shoe which countered and the screw-thread rod inserted in the brake arm 24 ] It is constituted by the electromagnet device 30 which was prepared in the holding fixture 28 and support plate 15 which are constituted as a primary member and hold a braking piece 26 on the brake arm 24 through the surface-of-a-sphere seat 27, and was connected in the Nagate medium of the brake arm 24 with the connecting pin 29.

[0021] In addition, as for the brake 22, the brake arm 24, the brake spring 25, the braking piece 26, and the electromagnet device 30 grade are arranged by both sides to the main shaft 17 in the symmetrical location, respectively. Although 12 is the main rope wrapped around the traction sheave 20 and the graphic display is omitted, it hangs to ends and \*\*\*\*\* is connected with them, respectively. 31 is the encoder arranged at the main-shaft 17 edge side, and is constituted by the operation plate 33 which is connected with the detection object 32 and bowl-like object 19 with which the support plate 15 was equipped, and rotates with a bowl-like object 19.

[0022] 34 is the inspection hole prepared in the base 2 by penetrating, is mutually left in the direction in alignment with the rim peripheral surface of the traction sheave 20, and is arranged in it while countering the rim side of the traction sheave 20 and being arranged. The conclusion part 36 is formed in 1 side, and it is concluded by the edge of an inspection hole 34 with the mounting screw thread 37, and an opposed face 38 is formed and another side forms few openings between the main ropes 12 wrapped around the traction sheave 20, and 35 is the main rope blank stop implement which fits into an inspection hole 34, and it is arranged [ it counters and ].

[0023] In the loop wheel machine for elevators constituted as mentioned above, the stationary portion of a hoistway is equipped with a loop wheel machine mainly through leg 13 \*\*, and a main rope 12 is inserted in the suspension pore 14, and is wrapped around the traction sheave 20. and -- although the traction sheave 20 rotates with the electric motor by the stator winding 18 and an armature 21, a main rope 12 drives according to frictional force and the graphic display is omitted -- a basket -- it hangs and goes up and down \*\*\*\*\* to a counter direction mutually.

[0024] And in the architecture of drawing 1 - drawing 6 , the brake 22 which presses the braking side 191 which the traction sheave 20 was formed in the bowl-like object 19 and one which the armature 21 was formed and formed the rotor, and was formed in the inner skin by the side of the opening edge of a bowl-like object 19 with a braking piece 26 is formed. Moreover, the bowl-like object 19 which constituted the rotor of the traction sheave 20 and the electric motor in the dead air space formed by the support plate 15, and a brake 22 are arranged in a base 2. It becomes possible to be able to make the outside dimension of a loop wheel machine small, and to miniaturize by this.

[0025] Moreover, maintenance service of brake 22 grade and inspection can be performed from the tooth space which countered opening of the bowl-like object 19. Therefore, there are few establishment tooth spaces of a loop wheel machine and maintenance services of a loop wheel machine, and inspection operating tooth spaces, and they end, and a loop wheel machine can be easily installed in a narrow tooth space. The problem to which establishment of a loop wheel machine is restrained, or establishment becomes difficult by this is solvable.

[0026] Moreover, the stator winding 18 and an armature 21 are arranged at the opening edge 3 side of a base 2. For this reason, by removing a support plate 15, an electric-motor part can be checked easily and maintenance work efficiency can be improved. Moreover, since the support plate 15 is equipped with the brake 22, a brake 22 can be removed from a base 2 with a support plate 15, a brake 22 can be checked easily, and maintenance work efficiency can be improved.

[0027] Moreover, an encoder 31 is arranged centering on main-shaft 17 end by the side of the base 2 of a support plate 15. For this reason, the dead air space of a support plate 15 and a base 2 can be used effectively, an encoder 31 does not project from a loop wheel machine, the outside dimension of a loop

wheel machine is made small, and it can miniaturize. Therefore, there are few establishment tooth spaces of a loop wheel machine and maintenance services of a loop wheel machine, and inspection operating tooth spaces, and they end, and establishment of a loop wheel machine can be easy-ized.

[0028] Moreover, the situation of the main rope 12 wrapped around the traction sheave 20 can be checked by the inspection hole 34 prepared in the base 2. Furthermore, an inspection hole 34 is equipped with the main rope blank stop implement 35, and birth of the nonconformity the main rope 12 which is the maintenance work time etc. and produced slack deviates from \*\*\*\* of the traction sheave 20 can be prevented beforehand.

[0029] Moreover, since the leg 13 is formed in a base 2, the stationary portion of a hoistway can be equipped with a loop wheel machine by simple architecture, and the elastic suspension can be carried out by easy architecture of equipping with a loop wheel machine through a rubber cushion. Furthermore, since a main rope 12 is inserted in the suspension pore 14 of the base 2 leg 13 and it is wrapped around the traction sheave 20, a main rope 12 can be protected, without preparing a protector (not shown) independently at the gate to a base 2. For this reason, simple architecture can protect birth of the nonconformity which debris contacts and damages at the gate of a main rope 12.

[0030] Moreover, at the time of rise and fall of an elevator basket, the electromagnet device 30 of a brake 22 is energized, the thrust of the brake spring 25 is resisted, a braking piece 26 is held in a retreated location, and braking of a bowl-like object 19 20, i.e., a traction sheave, is canceled. Moreover, at the time of a rundown of an elevator, it is pressed by the braking side 191 where the electromagnet device 30 was de-energized and the braking piece 26 was formed in the inner skin by the side of the opening edge of a bowl-like object 19 of the brake spring 25, and the traction sheave 20 is braked.

[0031] In this brake 22, if thrust of C and a braking piece 26 is set to D, the moment centering on the support pin 23 will be set to  $C \times L_1 = D \times L_2$ , and will serve as  $D > C$  from the connection of  $L_1 > L_2$  in the thrust of the brake spring 25, as shown in drawing 4.

[0032] That is, since thrust C of the brake spring 25 can be made smaller than the thrust D of a braking piece 26, the brake spring 25 can be miniaturized. Therefore, a brake 22 can be stored with space efficiency sufficient to the core of a bowl-like object 19.

[0033] Form 2. drawing 7 and drawing 8 of operation are drawing showing an example of the form of other operations of this invention, and it is the left side view of drawing 7 showing the condition that drawing 7 rotated with the front view and drawing 8 rotated the support plate with the hinge. In addition, the loop wheel machine for elevators is constituted like drawing 1 of the above-mentioned [ everything but drawing 7 and drawing 8 ] - drawing 6. In drawing, drawing 1 - drawing 6 and a same sign show a considerable part.

[0034] 15 is a support plate, is arranged corresponding to the upper part of a base 2, and forms most support plates 15. Correspond to the lower part of the rotation plate 151 which it was equipped with the brake 22 and concluded by the opening edge 3 of the base 2 removable, and a base 2, and the inferior border part of a support plate 15 is formed. It is constituted by the hinge 153 which was formed in the opposite part of both the fixed plate 152 and the rotation plate 151 with which the opening edge 3 of the base 2 was equipped, and fixed plate 152, and connected possible [ rotation of above-mentioned both ].

[0035] Also in the loop wheel machine for elevators constituted as mentioned above, the brake 22 which presses the braking side 191 which the traction sheave 20 was formed in the bowl-like object 19 and one which the armature 21 was formed and formed the rotor, and was formed in the inner skin by the side of the

opening edge of a bowl-like object 19 with a braking piece 26 is formed. Therefore, although detailed description is omitted, also in the form of operation of drawing 7 and drawing 8, the same operation as the activity in the form of operation of drawing 1 - drawing 6 is obtained.

[0036] Moreover, in the form of operation of drawing 7 and drawing 8, the rotation plate 151 which it was equipped with the brake 22 and formed the upper part of the support plate 15 is pivoted by the fixed plate 152 with a hinge 153. And where it rotated the rotation plate 151 of which conclusion with a base 2 was canceled as shown in drawing 8 with the hinge 153 and a brake 22 is opened wide, maintenance service of brake 22 grade and inspection are performed. Therefore, maintenance work of brake 22 grade can be performed easily, and can improve working capacity.

[0037] It is drawing in which form 3. drawing 9 of operation also shows an example of the form of other operations of this invention, and drawing 9 is the drawing 1 equivalent figure showing the condition of having removed the support plate and the brake in above-mentioned drawing 1, and having eliminated the armature applied part of the bowl-like object. In addition, the loop wheel machine for elevators is constituted like drawing 1 of the above-mentioned [ everything but drawing 9 ] - drawing 6. In drawing, drawing 1 - drawing 6 and a same sign show a considerable part, and 39 is a main rope advice implement. It is prepared in the inner surface of a base 2, it counters with the rim side of the traction sheave 20, and is arranged, and along with the perimeter of the traction sheave 20, fixed distance gets used to the radial direction of the perimeter to the traction sheave 20, and it is arranged between inspection holes 34.

[0038] Also in the loop wheel machine for elevators constituted as mentioned above, the brake 22 which presses the braking side 191 which the traction sheave 20 was formed in the bowl-like object 19 and one which the armature 21 was formed and formed the rotor, and was formed in the inner skin by the side of the opening edge of a bowl-like object 19 with a braking piece 26 is formed. Therefore, although detailed description is omitted, also in the form of operation of drawing 9, the same operation as the form of operation of drawing 1 - drawing 6 is obtained.

[0039] Moreover, in the form of operation of drawing 9, the inner surface of a base 2 is countered with the rim side of the traction sheave 20, and the main rope advice implement 39 is formed. For this reason, when it wraps a main rope 12 around the traction sheave 20, a main rope 12 is inserted in the suspension pore 14 of one leg 13 of a base 2, and that head is guided to main rope advice implement 39 page from an inspection hole 34. In this condition, if a main rope 12 is pushed in, it will show around at the main rope advice implement 39, and will advance into a core.

[0040] Subsequently, a main rope 12 is again guided to the following main rope advice implement 39 page by the following inspection hole 34. Such an activity can be repeated and the head of a main rope 12 can be pulled out from the suspension pore 14 of the leg 13 of another side of a base 2. A main rope 12 can be wrapped around \*\*\*\* of the traction sheave 20 without difficulty by this, and working capacity, such as installation of an elevator and maintenance service, can be improved.

[0041]

[Effect of the Invention] The base which carried out opening of the shape of a bowl to the nothing 1 side as this invention was explained above, The main shaft which was prepared in the base and has been arranged from the base core of the shape of a bowl of a base at the set-up condition, The bowl-like object which it is arranged in a base at a fitting condition, and a base meets the base of a base, is arranged, and a core is \*\*\*\* (ed) by the main shaft, and rotates, The traction sheave formed in the peripheral face of this bowl-like object,



and the stator winding prepared in the inner skin of the base, The brake which has the braking piece which the braking side which was established in the bowl-like object and formed in the inner skin of a bowl-like object is countered, and it is arranged, and carries out braking operation to the armature which is prepared in the peripheral face of a bowl-like object, counters with a stator winding, is arranged, and constitutes an electric motor by a stator winding is formed.

[0042] The brake which presses the braking side which the traction sheave was formed in the bowl-like object and one which the armature was prepared by this and formed the rotor by it, and was formed in the inner skin of a bowl-like object with a braking piece is formed. For this reason, the tooth space which could make the outside dimension of the loop wheel machine small, and countered opening of the bowl-like object can perform maintenance service of a brake etc., and inspection. Therefore, there are few establishment tooth spaces of a loop wheel machine and maintenance services of a loop wheel machine, and inspection operating tooth spaces, and they end, and there is effectiveness which cancels the nonconformity to which a loop wheel machine can be easily installed in narrow locality, establishment is restrained or establishment becomes difficult.

[0043] Moreover, as explained above, this invention forms the support plate with which the opening edge of the base was equipped and which formed the dead air space between bases, and supports the ends of a main shaft to the bottom and support plate of a base.

[0044] The bowl-like object and brake which constituted the rotor of the traction sheave and the electric motor in the dead air space formed by the support plate are arranged in a base by this. For this reason, there is effectiveness which makes the outside dimension of a loop wheel machine small, and is miniaturized.

[0045] Moreover, this invention forms the encoder which is arranged centering on the spindle nose by the side of the base of a support plate, and detects the revolution of a traction sheave, as explained above.

[0046] And since an encoder is arranged in the spindle nose of the dead air space by the support plate and a base, the dead air space of a support plate and a base can be used effectively, an encoder does not project from a loop wheel machine, the outside dimension of a loop wheel machine is made small, and it can miniaturize. By this, there are few establishment tooth spaces of a loop wheel machine and maintenance services of a loop wheel machine, and inspection operating tooth spaces, and they end, and there is effectiveness which easy-izes establishment of a loop wheel machine.

[0047] Moreover, as explained above, this invention penetrates a base and prepares the inspection hole left mutually in the direction which meets the peripheral surface of the rim of a traction sheave while countering the rim side of a traction sheave and being arranged. 1 side is concluded by the edge of this inspection hole, and another side forms the main rope blank stop implement which formed few openings between the main ropes wrapped around the traction sheave, and has been countered and arranged.

[0048] And there is effectiveness which can prevent beforehand birth of the nonconformity the main rope which produced slack deviates from \*\*\*\* of a traction sheave, and improves the actuation dependability of a loop wheel machine, and easy-izes the handling at the time of maintenance service by being equipped with a main rope blank stop implement.

[0049] Moreover, this invention prepares the base which has the leg in which the suspension pore in which it is formed in one and a main rope is inserted was prepared, as explained above.

[0050] Since the main rope is inserted in the suspension pore of the base leg by this, a main rope is



protected by it, without preparing a protector independently at the gate to the base of a main rope. For this reason, there is effectiveness which prevents birth of the nonconformity which debris contacts and damages in a main rope at the gate of a base by simple architecture.

[0051] Moreover, as this invention was explained above, it is prepared in the inner surface of a base and the main rope advice implement which countered with the rim side of the traction sheave, has been arranged, and has been arranged by fixed distance getting used radially from the perimeter of a traction sheave along with the perimeter of a traction sheave is formed.

[0052] When it wraps a main rope around a traction sheave, it supposes that a main rope is inserted from the 1 side between a main rope advice implement and a traction sheave, the head is shown by this in a main rope advice implement side, and it advances into a core by it. And a main rope can be pulled out from the other side between a main rope advice implement and a traction sheave. A main rope can be wrapped around \*\*\*\* of a traction sheave without difficulty by this, and it is effective in improving working capacity, such as installation of an elevator, and maintenance service.

[0053] Moreover, as explained above, this invention prepares a traction sheave in the opposite part side at the base of a base of a bowl-like object, and prepares an armature in the base opening edge side of a bowl-like object.

[0054] By this, since a stator winding and an armature are arranged at the opening edge side of a base, a support plate can be removed, and an electric-motor part can be checked easily. For this reason, it is effective in improving maintenance work efficiency.

[0055] Moreover, as explained above, this invention equips a support plate with a brake, and arranges it between bases.

[0056] By this, a brake can be removed from a base with a support plate, a brake can be checked easily, and it is effective in improving maintenance work efficiency.

[0057] Moreover, as explained above, the hinge which pivoted the support plate possible [ rotation of the rotation plate with which the brake was equipped, and which was concluded by the base removable, the fixed plate with which the opening edge of the base was equipped, a rotation plate, and a fixed plate ] constitutes this invention.

[0058] Maintenance service of a brake etc. and inspection can be performed in the condition of having rotated with the hinge the rotation plate of which conclusion with a base was canceled, and having opened wide from the base by this. Therefore, it is effective in being able to perform maintenance work, such as a brake, easily and improving working capacity.

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[Translation done.]